PHILIPS

LED Transformers

Datasheet

LED Transformers

LED Transformer 150W IP67 24VDC 220-240V

Product description

Philips full-electronic constant voltage LED Transformers are designed to operate 24VDC LED solutions used in general applications such as refrigerated display lighting, retail display lighting and linear accent lighting. They are specifically designed to ensure the highest performance with maximum robustness combined with a long lifetime. Additional, the IP67 range are designed for outdoor environment applications such as signage and flood lighting.

Benefits

- SELV operating voltages, ensuring safety even if wiring or LED boards become damaged
- Energy savings through high efficiency
- Ultimate robustness, offering peace of mind and lower maintenance costs
- High thermal and EMC performance, enabling easy design-in
- IP rated housing, allowing for driver gearbox with low IP rating
- Long lifetime

Features

- Independent use for Insulation Class I applications
- Global approbations and certifications
- Stablized output voltage
- Wide ambient temperature range
- Protection against overpower and overvoltage
- Output short-circuit shutdown feature with automatic restart

Applications

- Area and flood lighting
- Industry lighting
- Signage lighting

Electrical input data

Specification item	Value	Unit	Condition
Rated input voltage range	220 ... 240	Vac	Performance
Rated input voltage range	198 ... 264	Vac	Operational safety
Rated input frequency	50 ... 60	Hz	Performance
Rated input frequency	45 ... 66	Hz	Operational safety
Rated input current	0.72	A	230Vac, @ rated output power
Rated input power	165	W	230Vac, @ rated output power
Power factor	0.99		230Vac, @ rated output power.
Total harmonic distortion	8	%	230Vac, @ rated output power.
Efficiency	92	%	@ rated output power @ rated input voltage @max. Uout

Electrical output data

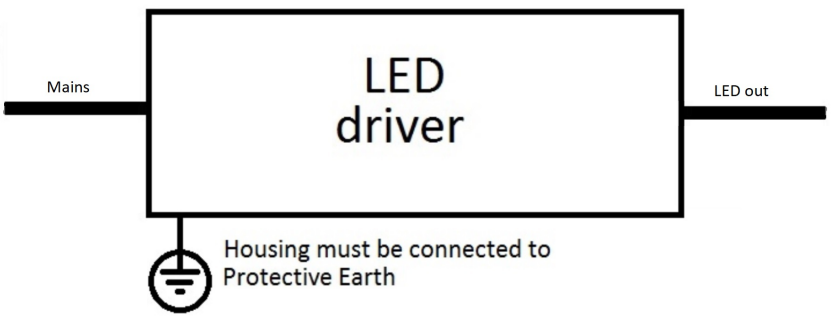
Specification item	Value	Unit	Condition
Regulation method	Constant Voltage		Rated output voltage = 24VDC
Output voltage range	22.8 ... 25.2	Vdc	
Output current range	0.1 ... 6.25	Adc	
Output voltage ripple	< 300	mV_{pp}	
Rated output power	150	W	
Line regulation	< 3	%	
Load regulation	< 5	%	
Turn-on delay	≤ 1	s	
Output voltage rise time	≤ 100	ms	
Hold-up time	≥10	ms	
Control method	Fixed		

Logistical data

Specification item	Value
Product name	LED Transformer 150W IP67 24VDC 220-240V
Order code	694793915922200
Logistic code 12NC	9290 014 85580
Pieces per box	6

Wiring & Connections

Specification item	Value	Unit	Condition
Input wire cross-section	1.0	mm^2	Stranded wires
Input cable diameter	8	mm	
Input wire strip length	8 ... 10	mm	
Output wire cross-section	1.0	mm^2	Stranded wires
Output cable diameter	7	mm	
Output wire strip length	8 ... 10	mm	
Maximum output cable length	1.0	m	CISPR15: between driver and LED module

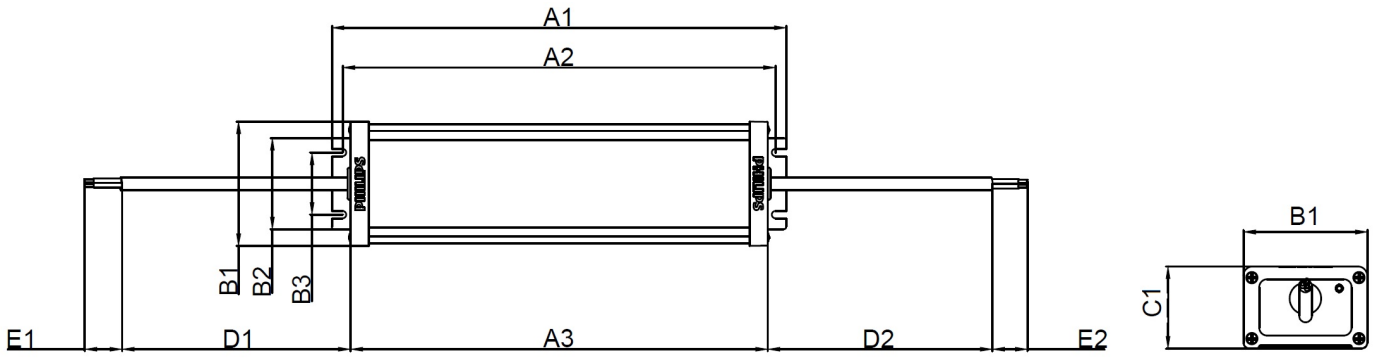


Insulation

Insulation	Mains	LED	Housing
Mains		SELV (double)	Basic
LED	SELV (double)		Basic
Housing	Basic	Basic	

Dimensions and weight

Specification item	Value	Unit	Condition
Length (A1)	250	mm	
Length (A3)	232	mm	
Width (B1)	68	mm	
Width (B2)	50	mm	
Fixing hole distance (A2)	238	mm	Fixing hole diameter: 4.2 mm
Fixing hole distance (B3)	34	mm	
Height (C1)	45	mm	
Input cable D1	300	mm	
Output cable D2	300	mm	
Wire length E1	60	mm	
Wire length E2	60	mm	
Weight	1010	gram	



Operational temperatures and humidity

Specification item	Value	Unit	Condition
Driver ambient temperature	-40 ... +55	ºC	At rated output power. Higher ambient temperature allowed as long as Tcase-max is not exceeded.
Tcase-min	-40	ºC	
Tcase-max	+90	ºC	Max. steady-state Tcase
Tcase-life	-40 ... +80	ºC	For rated driver lifetime
Maximum housing temperature	110	ºC	In case of failure
Relative humidity	10 ... 90	%	Non-condensing
Ingress Protection *	IP67		
Noise and hum	≤ 24	dB	

*: The LED Transformer is primarily intended for independent use. It must not be exposed including but not limited to snow, water and ice or any other chemical agent which may have an adverse affect on driver operation and performance. Exposure may lead to driver failure. It is the luminaire manufacturer's / installer's responsibity to prevent exposure.

Storage temperature and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-40 ... +80	ºC	
Relative humidity	5 ... 95	%	Non-condensing

Lifetime

Specification item	Value	Unit	Condition
Rated driver lifetime	50,000	hours	Tcase ≤ Tcase-life. Maximum failures = 10%. See graph.

Features

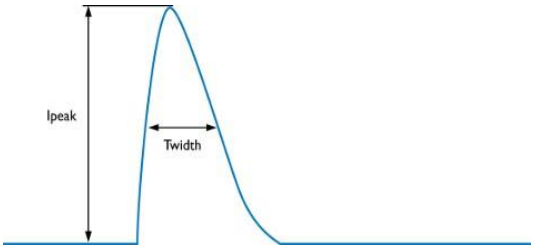
Specification item	Value	Remark	Condition
Open load protection	Yes		U_{out} (open circuit) = 25.2V max.
Short-circuit protection	Yes		Hiccup mode, automatic recovering
Overpower protection	Yes		Automatic recovering
Overheating protection	Yes		Automatic recovering, see ThermalGuard graph
Hot wiring	Yes		
Suitable insulation class applications	I		Per IEC60598

Certificates and standards

Specification item	Value
Approval marks	CE / ENEC / CB / F / CCC / RCM / IP67 / SELV / Double-insulated / Independent

Inrush current

Specification item	Value	Unit	Condition
Inrush current I_{peak} (typ)	38	A	Input voltage 240Vac
Inrush current T_{width} (typ)	600	µs	Input voltage 240Vac, measured at 50% Ipeak
Max. recommended number of drivers	4	pcs	MCB 16A B type, mains impedance 200mΩ + 400µH



MCB	Rating	Relative number of drivers *
B	6A	37%
B	10A	63%
B	13A	81%
B	16A	**100%**
B	20A	125%
B	25A	156%
C	6A	63%
C	10A	104%
C	13A	135%
C	16A	170%
C	20A	208%
C	25A	260%
D	6A	125%
D	10A	104%
D	13A	135%
D	16A	170%
D	20A	208%

***** : please check that cable cross sectional area corresponds with MCB rating and type

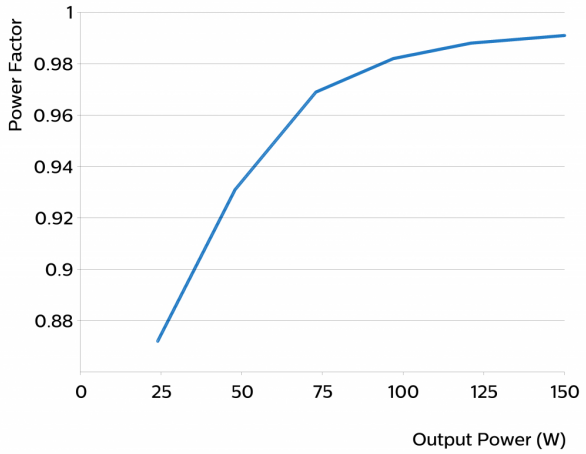
Surge immunity

Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	6/ 3	kV / kA	L-N, acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	6	kV	L/N - GND, acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us

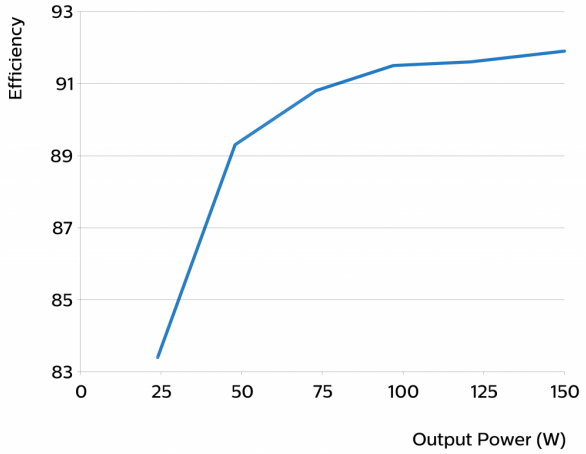
Driver protective conductor current

Specification item	Value	Unit	Condition
Typical protective conductor current (ins. Class I)	0.17	mA rms	Acc. IEC61347-1. LED module contribution not included

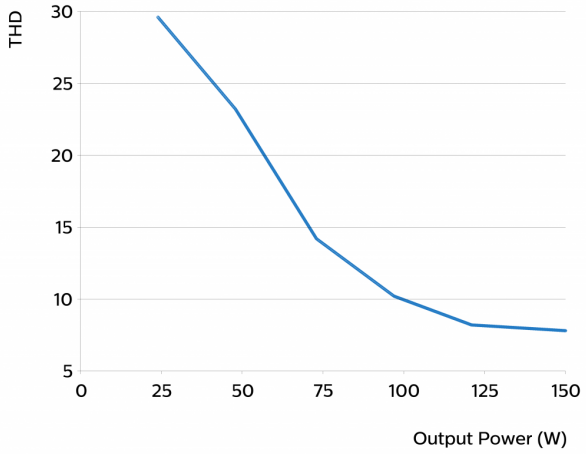
Power factor versus output power



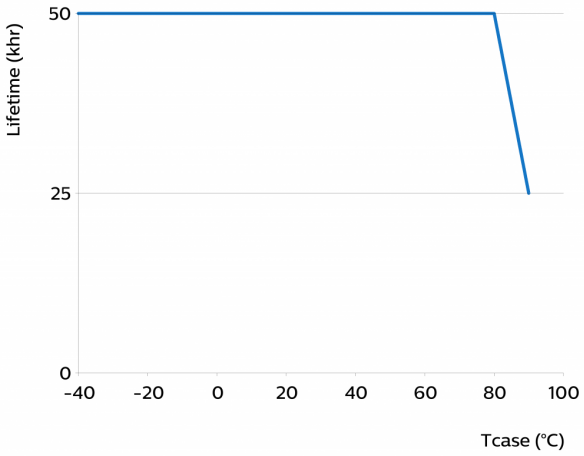
Efficiency versus output power



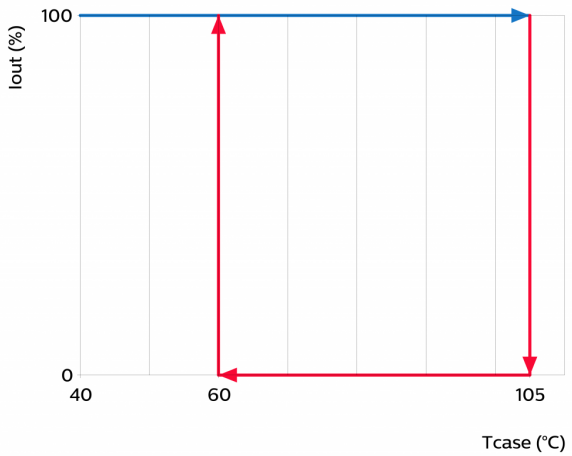
THD versus output power



Driver lifetime versus Tc temperature



Thermal Guard



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